

CLAIMS

1. Composition for use in a water tank in the kitchen or sanitary sector, characterized by ,

- a basic composition (2, 3; 2') essentially evolving its function following addition to a first water filling of the water tank and
- at least one particle (6; 6'; 6'') with
  - at least one core (8; 8'; 8'') comprising at least one substance evolving its function essentially after an at least partial emptying of the first water filling from the water tank and the inflow of fresh water and
  - a covering (9; 9'; 9'') substantially completely surrounding the core or cores and comprising at least one compound, whose solubility increases with decreasing concentration of a specific compound in the surrounding medium,

agents being provided to prevent up to the inflow of fresh water to the water tank a significant dissolving of the covering (9; 9'; 9'') or a significant detachment of the covering (9; 9'; 9'') from the core (8; 8') or cores (8'').

2. Composition according to claim 1, characterized in that the concentration of the specific compound in the local environment of the particle or particles (6; 6'; 6'') up to the inflow of fresh water to the water tank is sufficiently high to prevent up to this time a significant dissolving of the covering (9; 9'; 9'') or a significant detachment of the covering (9; 9'; 9'') from the core (8; 8') or the cores (8'').

3. Composition according to claim 2, characterized in that the particle or particles (6; 6'; 6'') are coated with a substance which, substantially independently of the concentration of the specific compound in the surrounding medium, dissolves or separates in the period from the addition of the composition to the water filling of the water tank up to the at least partial emptying thereof from the water tank.

4. Composition according to one of the claims 1 to 3, characterized in that the basic composition is in the form of a tablet (1; 1').

5. Composition according to claim 4, characterized in that the at least one particle (6; 6'; 6'') is placed in or on the tablet (1; 1') in such a way that

the concentration of the specific compound in the local environment of the particle or particles up to a substantially complete dissolving of the tablet (1; 1') is sufficiently high to prevent a significant dissolving of the covering or a significant detachment of the covering from the core.

6. Composition according to claim 5, characterized in that the or all the particles (6) are received in at least one cavity (4, 5) of the tablet (1) completely surrounded by the basic composition (2, 3).

7. Composition according to claim 6, characterized in that the at least one cavity (4, 5) contains one or more particles (6) which, alone or together, have essentially the same volume as the cavity (4, 5).

8. Composition according to claim 6, characterized in that the at least one cavity has a larger volume than the or all the particles (6) received in the particular cavity (4, 5).

9. Composition according to claim 8, characterized in that the particle or particles (6) are placed loosely in the interior of the cavity (4, 5).

10. Composition according to claim 8, characterized in that the particle or particles (6) are fixed in the interior of the cavity (4, 5).

11. Composition according to claim 10, characterized in that the particle or particles (6) are fixed by an adhesive in the interior of the cavity (4, 5).

12. Composition according to one of the claims 6 to 11, characterized in that the cavity (4, 5) is positioned substantially centrally in the interior of the tablet (1).

13. Composition according to one of the claims 6 to 12, characterized in that the tablet (1) has a single, substantially spherical cavity (4, 5).

14. Composition according to one of the claims 8 to 13, characterized in that the cavity (4, 5) contains a single, substantially spherical particle (6), whose external diameter is smaller than the internal diameter of the cavity.

15. Composition according to claim 5, characterized in that the or all the particles (6'; 6'') are received in at least one cavity (4') of the tablet (1'), which is only partly surrounded by the basic composition.

16. Composition according to claim 15, characterized in that the cavity is a depression (4') in one of the surfaces (11') of the tablet (1') in which the

particle or particles (6'; 6'') are at least partly received.

17. Composition according to claim 15 or 16, characterized in that the particle or particles are placed in the cavity or depression (4') in such a way that they do not project over the surface or surfaces (11') of the tablet (1').

18. Composition according to one of the claims 15 to 17, characterized in that the cavity or depression (4') only contains a single particle (6'; 6''), whose volume and shape in the vicinity of the cavity or depression substantially coincides with the volume and shape of the cavity or depression (4') and substantially completely fills the same.

19. Composition according to one of the claims 15 to 18, characterized in that the cavity or depression (4'), parallel to one of the surface or surfaces (11') to which it opens or in which it is placed, has a substantially circular cross-sectional surface.

20. Composition according to one of the claims 15 to 19, characterized in that the cavity or depression (4') only opens to the surface or surfaces (11') to the extent that the particle or particles (6'; 6'') located therein cannot pass out of the opening or openings of the cavity or depression (4').

21. Composition according to claim 20, characterized in that the particle or particles (6'; 6'') are loosely arranged in the cavity or depression (4').

22. Composition according to one of the claims 15 to 20, characterized in that the particle or particles are fixed in the cavity or depression (4').

23. Composition according to claim 22, characterized in that the particle or particles (6'; 6'') are fixed by an adhesive (10') in the cavity or depression (4').

24. Composition according to one of the preceding claims, characterized in that the covering (9; 9'; 9'') comprises at least one compound, which at the concentration of the specific compound prior to the inflow of fresh water is not or is only slightly soluble and at the concentration of the specific compound following the inflow of an adequate quantity of fresh water has an adequate solubility for it to be so significantly dissolved or detached from the core or cores that an at least partial escape of the core material into the surrounding medium is made possible.

25. Composition according to claim 24, characterized in that the solubility

of the compound increases with decreasing OH<sup>-</sup> ionic concentration and therefore decreasing pH-value in the surrounding medium.

26. Composition according to claim 25, characterized in that the compound comprises a polymer.

27. Composition according to claim 26, characterized in that the compound comprises a pH-sensitive polymer which comprises at least one repeat unit, which has at least one basic function not forming part of the polymer backbone chain.

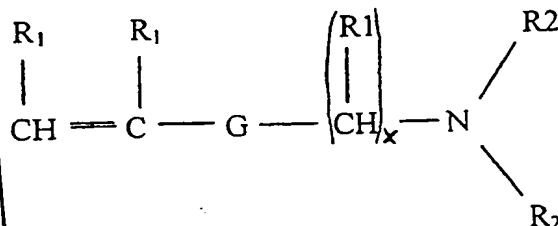
28. Composition according to claim 27, characterized in that the polymer comprises at least one repeat unit based on a compound chosen from the group consisting of vinyl alcohol derivatives, acrylates or alkyl acrylates having said basic function.

29. Composition according to claim 27, characterized in that the polymer is a carbohydrate functionalized with said basic function.

30. Composition according to one of the claims 27 to 29, characterized in that the basic function is an amine.

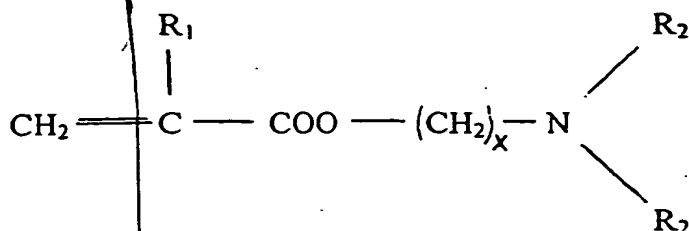
31. Composition according to claim 30, characterized in that the basic function is a secondary or tertiary amine.

32. Composition according to claim 31, characterized in that the repeat unit is based on a compound with the following formula III:



in which G is a linking group selected from -COO-, -OCO-, -CONH-, -NHCO-, -NHCONH-, -NHCOO-, -OCONH- or -OCCO-, R<sub>1</sub>, independently of one another, is hydrogen or an alkyl group with 1 to 3 carbon atoms, R<sub>2</sub>, independently of one another, is hydrogen or an alkyl group with 1 to 5 carbon atoms and x is an integer from 1 to 6.

33. Composition according to claim 32, characterized in that the repeat unit is based on a compound with the following formula IV.



in which R<sub>1</sub>, independently of one another, is hydrogen or an alkyl group with 1 to 3 carbon atoms, R<sub>2</sub>, independently of one another, is hydrogen or an alkyl group with 1 to 5 carbon atoms and x is an integer from 1 to 6.

34. Composition according to one of the claims 27 to 29, characterized in that the basic function is an imine.

35. Composition according to one of the claims 27 to 29, characterized in that the basic function is a basic, aromatic N-containing group.

36. Composition according to claim 35, characterized in that the basic function is a pyridine group.

37. Composition according to claim 35, characterized in that the basic function is an imidazole group.

38. Composition according to claim 29, characterized in that the pH-sensitive polymer is derived from chitosan.

39. Composition according to claim 24, characterized in that the compound comprises K-carrageenan.

40. Composition according to claim 24, characterized in that the solubility of the compound increases with decreasing H<sup>+</sup> ion concentration and therefore increasing pH-value in the surrounding medium.

41. Composition according to claim 40, characterized in that the compound comprises a polymer.

42. Composition according to claim 41, characterized in that the compound comprises a pH-sensitive polymer having at least one repeat unit, which is based on a compound having an acid function.

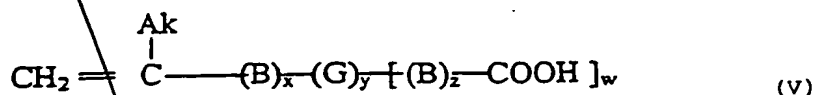
43. Composition according to claim 42, characterized in that the polymer has at least one repeat unit based on a compound which is selected from the group of vinyl alcohol derivatives, acrylates or alkyl acrylates having said acid

function.

44. Composition according to claim 42, characterized in that the polymer is a carbohydrate functionalized with said acid function.

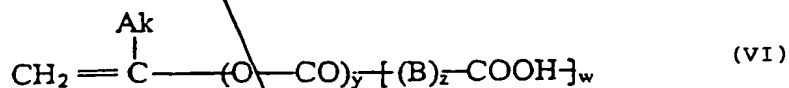
45. Composition according to one of the claims 42 to 44, characterized in that the acid function is a carboxyl group:

46. Composition according to claim 45, characterized in that the repeat unit is based on a compound with the following formula V:



in which G is a linking group selected from -COO-, -OCO-, -CONH-, -MHCO-, -NHCONH-, -NHCOO-, -OCONH- or -OCOO-, B, independently of one another, is a hydrocarbon group selected from straight or branched-chain, saturated or unsaturated, optionally substituted alkylene, arylene or aralkylene, Ak is hydrogen or an alkyl group, preferably with 1 to 4 carbon atoms, x, y and z, independently of one another, are either 0 or 1 and w is an integer from 1 to 3.

47. Composition according to claim 46, characterized in that the repeat unit is based on a compound with the following formula VI:



in which B, independently of one another, is a hydrocarbon group selected from straight or branched-chain, saturated or unsaturated, optionally substituted alkylene, arylene or aralkylene, Ak is hydrogen or an alkyl group, preferably with 1 to 4 carbon atoms, y and z, independently of one another, are either 0 or 1, and w is an integer from 1 to 3.

48. Composition according to claim 44, characterized in that the pH-sensitive polymer is derived from a polysaccharide by partial esterification of some of its free hydroxyl group with a polycarboxylic acid and/or by partial etherification of some of its free hydroxyl groups with a product obtained by the esterification of one mole of a polycarboxylic acid with one mole of a polyol.

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